

WHAT IS CLAIMED IS:

1. An airflow directing baffle for insertion into a casing of an air-cooled electric motor to direct a flow of cooling air, the baffle comprising:

a body having an annular section surrounding a central opening for passage of said flow of cooling air, the central opening defining a plane generally transverse to a longitudinal axis of the body, the annular section having an upstream face for directing air toward the central opening and a downstream face for directing air away from the opening;

said downstream face of the annular section being inclined in a radially outward and downstream direction at an angle relative to the plane of the central opening so that air which flows adjacent the downstream face has a component of motion in the downstream direction.

2. A baffle as set forth in claim 1 wherein said annular section has an inner circumferential edge defining said central opening and an outer circumferential edge spaced radially outward from said inner edge, said outer edge being spaced longitudinally downstream from said inner edge.

3. A baffle as set forth in claim 2 wherein said downstream face of said annular section comprises a generally conical region.

4. A baffle as set forth in claim 1 wherein said angle is between 5 and 20 degrees.

5. A baffle as set forth in claim 4 wherein said angle is about 7 degrees.

6. A baffle as set forth in claim 1 in combination with the electric motor.

7. An electric motor having a ventilation system which inhibits generation of noise, the motor comprising:

a housing defined by a hollow casing;

a stator secured in the housing;

5 a rotor and a rotor shaft mounting the rotor for rotation in the housing about an axis;

a fan mounted on said rotor shaft for rotation to advance a flow of cooling air through the housing to cool the motor, the fan having a central hub and a plurality of blades; and

10 a baffle secured in the housing at a position generally between the stator and the fan for directing said flow, the baffle having an annular shape and a central opening for passage of cooling air toward the fan;

wherein the blades of the fan are spaced from the hub thereby forming a clearance region between the hub and the blades.

8. An electric motor as set forth in claim 7 wherein the fan has an intended direction of rotation about said axis and wherein the blades of the fan are inclined in a direction opposite said direction of rotation.

9. An electric motor as set forth in claim 8 wherein the baffle has an upstream side facing toward the stator and an opposite downstream side facing toward the fan, and wherein the baffle is positioned such that the downstream side is spaced from the fan blades with a gap which is generally uniform in size along the gap.

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10. An electric motor as set forth in claim 9 wherein said gap is within a range of from about 1/16 inch to 3/16 inch.

11. An electric motor as set forth in claim 9 further comprising a rim on the baffle which is positioned generally at an outer periphery of the baffle, the rim having at least one tab configured for being received in a corresponding hole in the casing to releasably secure the baffle in the casing.

12. An electric motor comprising:

a housing defined by a hollow casing;

a stator secured in the housing;

a rotor and a rotor shaft mounting the rotor for rotation in the

5 housing about an axis;

a fan mounted on said rotor shaft for rotation to advance a flow of cooling air through the housing to cool the motor, the fan having a central hub and a plurality of blades; and

10 a baffle secured in the housing at a position generally between the stator and the fan for directing said flow, the baffle having an annular shape and defining a central opening for passage of cooling air toward the fan;

wherein the baffle is sized for being received in the casing with a slip fit.

13. An electric motor as set forth in claim 12 further comprising a rim at an outer periphery of the baffle, and at least one tab on the rim configured for reception in a corresponding hole in the casing to releasably secure the baffle in the casing.

14. An electric motor as set forth in claim 13 further comprising a locking formation on the tab for snap-lock reception in said corresponding hole.

15. An electric motor as set forth in claim 13 wherein the baffle has a plurality of bolt holes circumferentially spaced on the body for receiving bolts extending between ends of the motor.

16. An electric motor as set forth in claim 15 wherein said at least one tab is positioned adjacent one of said bolt holes whereby a bolt in said bolt hole prevents removal of said at least one tab from said corresponding hole.